

What is claimed is:

1       1. A dual-sided flat panel display structure,  
2 comprising:

3           two sets of light source modules;  
4           two polarizing plates between the light source modules;  
5           a first and second substrates between the polarizing  
6           plates;  
7           a driving array at an inner side of the first  
8           substrate; and  
9           light valve device between the first substrate and  
10          second substrates.

1       2. The structure as claimed in claim 1, further  
2 comprising a color filter between the polarizing plates.

1       3. The structure as claimed in claim 1, wherein  
2 screen sizes on either side thereof are the same or  
3 different.

1       4. The structure as claimed in claim 1, wherein the  
2 flat panel display is a liquid crystal display (LCD).

1       5. The structure as claimed in claim 1, wherein the  
2 driving array comprises a thin film transistor (TFT) array.

1       6. The structure as claimed in claim 1, wherein the  
2 driving array comprises a passive matrix driving array.

1       7. The structure as claimed in claim 1, wherein the  
2 driving array comprises a thin film diode (TFD) array.

1        8. The structure as claimed in claim 1, wherein the  
2 flat panel display is a STN-LCD.

1        9. The structure as claimed in claim 1, wherein the  
2 flat panel display is an organic light-emitting diode (OLED)  
3 display.

1        10. The structure as claimed in claim 1, wherein the  
2 flat panel display is an electrophoresis display.

1        11. The structure as claimed in claim 1, wherein the  
2 light source modules are provided by the same light source.

1        12. The structure as claimed in claim 1, wherein the  
2 light source modules are provided by different light  
3 sources.

1        13. The structure as claimed in claim 1, wherein the  
2 light source of the light source modules is LEDs.

1        14. The structure as claimed in claim 1, wherein the  
2 light source of the light source modules is cold cathode  
3 fluorescent lamps.

1        15. The structure as claimed in claim 1, wherein the  
2 light source comprises red light, blue light, and green  
3 light.

1        16. The structure as claimed in claim 1, wherein the  
2 light source comprises yellow light, magenta light, and cyan  
3 light.

1        17. The structure as claimed in claim 1, wherein the  
2 light source is white light source.

1        18. An operating method of a dual-sided flat panel  
2 display having a first and second light source modules, two  
3 substrates between the first and second light source  
4 modules, and a driving array on an inner side of the first  
5 substrate, comprising:

- 6           (a) lighting the first light source module;
- 7           (b) outputting a first image signal from the driving  
8              array to control a first display of a first  
9              image;
- 10          (c) switching off the first light source module,  
11              followed by lighting the second light source  
12              module;
- 13          (d) outputting a second image signal from the driving  
14              array to control a second display of a second  
15              image;
- 16          (e) switching off the second light source module,  
17              followed by lighting the first light source  
18              module; and
- 19          (f) repeating steps (b) through (e).

1        19. The method as claimed in claim 18, wherein the  
2 driving array comprises a of thin film transistor (TFT)  
3 array.

1        20. The method as claimed in claim 18, wherein the  
2 driving array comprises a passive matrix driving array.

1        21. The method as claimed in claim 18, wherein the  
2 driving array comprises a thin film diode (TFD) array.

1        22. The method as claimed in claim 18, wherein the  
2 flat panel display is a STN-LCD.

1        23. The method as claimed in claim 18, wherein the  
2 flat panel display is an organic light-emitting diode (OLED)  
3 display.

1        24. The method as claimed in claim 18, wherein the  
2 flat panel display is an electrophoresis display.

1        25. The method as claimed in claim 18, wherein the  
2 first and second light source modules are provided by the  
3 same light source.

1        26. The method as claimed in claim 18, wherein the  
2 first and second light source modules are provided by  
3 different light sources.

1        27. The method as claimed in claim 18, wherein the  
2 light source of the light source modules is LEDs.

1        28. The method as claimed in claim 18, wherein the  
2 light source of the light source modules is cold cathode  
3 fluorescent lamps.

1        29. The method as claimed in claim 18, wherein the  
2 light source is white light source.

1        30. The method as claimed in claim 18, wherein the  
2 light source comprises red, blue, and green light.

1           31. The method as claimed in claim 18, wherein the  
2 light source comprises yellow, magenta, and cyan light.

1           32. The method as claimed in claim 18, wherein the  
2 length of time the first and second light source modules are  
3 lit is less than 24 milliseconds.

1           33. The method as claimed in claim 18, wherein a ratio  
2 of the length of time the first light source module is lit  
3 to that of the second light source module is between 3 and  
4 1/3.

1           34. The method as claimed in claim 18, wherein the  
2 first and second signals display different images.

1           35. The method as claimed in claim 18, wherein a  
2 reaction time of a liquid crystal molecule is shorter than  
3 20 milliseconds when using white light as a light source.

1           36. The method as claimed in claim 18, wherein a  
2 reaction time of a liquid crystal molecule is shorter than  
3 10 milliseconds when using red, blue, and green light as  
4 light sources.

1           37. The method as claimed in claim 18, wherein the  
2 first and second signals display images using imaging  
3 sequential technology.

1           38. The method as claimed in claim 18, wherein the  
2 first and second signals display images using color  
3 sequential technology.